

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 11289023  
PUBLICATION DATE : 19-10-99

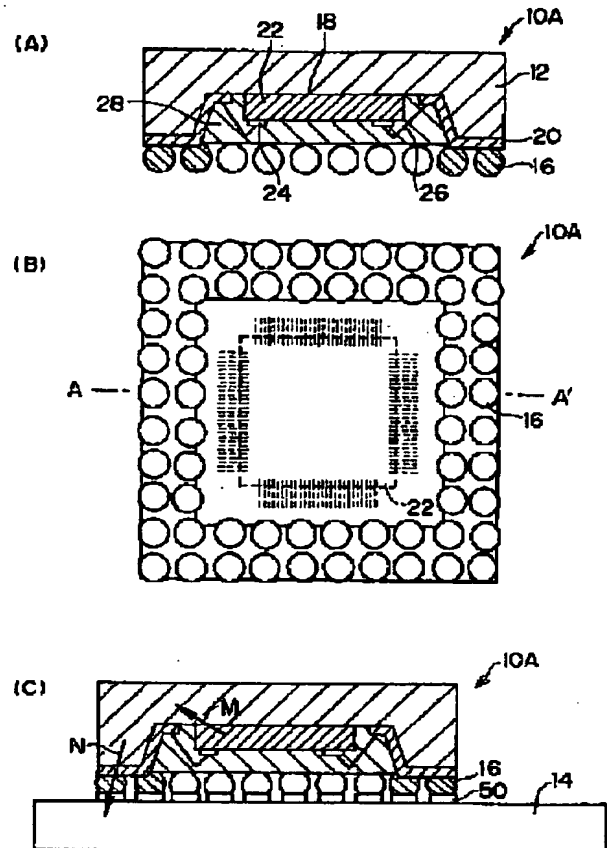
APPLICATION DATE : 02-04-98  
APPLICATION NUMBER : 10090137

APPLICANT : OKI ELECTRIC IND CO LTD;

INVENTOR : NAKAMURA AKIO;

INT.CL. : H01L 23/12

TITLE : SEMICONDUCTOR DEVICE AND  
MANUFACTURE THEREOF



**ABSTRACT :** **PROBLEM TO BE SOLVED:** To enable suppression of occurrence of corrosive deterioration of a circuit part in a semiconductor device and also enable suppression of delay in operation caused by heat.

**SOLUTION:** First a recess 18 is formed nearly in the center of a semiconductor substrate 12 prepared from a silicon wafer, a wiring pattern 20 is formed as extended from the vicinity of an outer periphery of a surface of the substrate having the recess 18 toward the inside of the recess 18, and a semiconductor pellet 22 is placed on the recess 18 nearly in its center. Next, an electrode 24 is connected to the wiring pattern 20 by means of a metallic wire 26, resin 28 is filled into the recess 18, and then bump terminals 16 are formed on the wiring pattern 20 in the vicinity of the ends of the substrate 12. A semiconductor device 10A manufactured through the above steps is mounted on an external substrate 14.

COPYRIGHT: (C)1999,JPO